

Applicant : Walter H. Hsu et al.
Serial No. : 10/509,926
Filed : July 29, 2005
Page : 8 of 11

Attorney's Docket No.: 08411-041US1 / ISURF
#02842

Amendments to the Drawings:

In Figure 5, Applicants moved the "Rc" identification to a position that increases its visibility.

Applicants are resubmitting a complete set of replacement drawings, which are attached at the end of this Amendment.

Attachments following last page of this Amendment:

Replacement Sheets (14 sheets)

REMARKS

The Examiner rejected claims 1-33. Claims 1-33 have been cancelled herein without prejudice. New claims 34-60 have been added herein. Thus, claims 34-60 are pending.

The specification has been amended herein to insert the priority statement and to correct several misspellings. New claims 34, 39, 46, 49, 53, and 57 are independent product or method claims that recite a mycoplasma polypeptide of a pathogenic *Mycoplasma hyopneumoniae*. Applicants' specification including the originally presented claims fully supports these new claims and amendments. Thus, no new matter has been added.

In light of these amendments and the following remarks, Applicants respectfully request reconsideration and allowance of claims 1, 3-5, 14-16, 19-26, and 28-33.

Priority

The Preliminary Amendment filed on October 1, 2004, provides the priority data.

Rejections under 35 U.S.C. § 112, first paragraph

The Examiner rejected claims 1-33 under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement. In particular, the Examiner stated that "the specification, while being enabling for *M. hyopneumoniae* membrane proteins with molecular weights of about 30 to about 100 kDa which increases calcium release from porcine ciliated tracheal cells, does not reasonably provide enablement for the range of the instant claims, i.e., any/all polypeptides from any/all other sources with a molecular weight of about 30 to about 150 kDa."

Applicants respectfully disagree. A person having ordinary skill in the art reading Applicants' specification would have been able to make and use the previously claimed invention without undue experimentation. To further prosecution, however, claims 1-33 have been cancelled herein without prejudice. In addition, new claims 34-60, which are product or method claims that recite a mycoplasma polypeptide of a pathogenic *Mycoplasma hyopneumoniae*, have been added. A person having ordinary skill in the art reading Applicants' specification would have been able to make and use the presently claimed invention without

undue experimentation. For example, a person having ordinary skill in the art would have been able to follow the extensive teachings provided throughout Applicants' specification to obtain a substantially pure mycoplasma polypeptide of a pathogenic *Mycoplasma hyopneumoniae* having the ability to increase calcium release from porcine ciliated tracheal cells. This is particularly true given Applicants' working examples demonstrating that mycoplasma polypeptides of pathogenic *Mycoplasma hyopneumoniae* increase calcium release from porcine ciliated tracheal cells. See, e.g., Example 1 starting on page 14 of Applicants' specification. Thus, Applicants' specification fully enables new claims 34-60.

Rejections under 35 U.S.C. § 102(b)

The Examiner rejected claims 1-27 under 35 U.S.C. § 102(b) as being anticipated by Ross *et al.* (WO 95/09870). Specifically, the Examiner stated that while "Ross et al do not specifically test calcium release, in the absence of evidence to the contrary, the ability of the polypeptides of Ross et al to induce calcium release is an inherent capability of the polypeptides."

Applicants respectfully disagree. The Ross *et al.* reference discloses adhesins from *Mycoplasma hyopneumoniae*. According to Applicants' specification, a published research article, and a grant application submitted by Dr. Hsu, adhesins from *Mycoplasma hyopneumoniae* do not increase calcium release from porcine ciliated tracheal cells. In particular, page 22, lines 10-11 of Applicants' specification states that "experiments with adhesins demonstrated that adhesins from *M. hyopneumoniae* including P97 failed to increase $[Ca^{2+}]_i$." Likewise, the last paragraph on page 2505 of the Park *et al.* reference (*Infection & Immunity*, 70(5):2502-2506 (2002)), which was submitted on April 18, 2005, as reference #51 of the PTO-1449 form, states that "it has been recently discovered that adhesins from *M. hyopneumoniae*, including P97, failed to increase $[Ca^{2+}]_i$ " Another copy of the Park *et al.* reference is attached hereto for the Examiner's convenience. Moreover, page 3 of Dr. Hsu's grant application states that "we found that known adhesins from *Mhyo*, including P97 and P102,

Applicant : Walter H. Hsu et al.
Serial No. : 10/509,926
Filed : July 29, 2005
Page : 11 of 11

Attorney's Docket No.: 08411-041US1 / ISURF
#02842

failed to increase $[Ca^{2+}]_i$ in porcine tracheal cells” A copy of Dr. Hsu’s grant application is submitted with the accompanying Information Disclosure Statement.

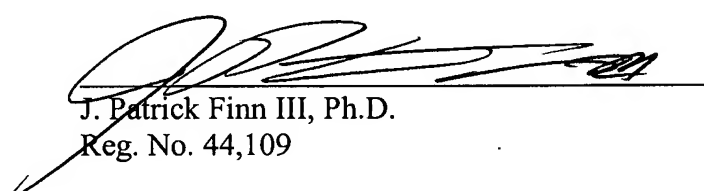
In light of this evidence, the Ross *et al.* reference does not anticipate, nor render obvious, previously pending claims 1-27 or new claims 34-60.

CONCLUSION

Applicants submit that claims 34-60 are in condition for allowance, which action is requested. The Examiner is invited to call the undersigned attorney at the telephone number below if such will advance prosecution of this application. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: December 22, 2006


J. Patrick Finn III, Ph.D.
Reg. No. 44,109

Fish & Richardson P.C.
60 South Sixth Street, Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696